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ANCIENT EGYPT

1920. PART IV.

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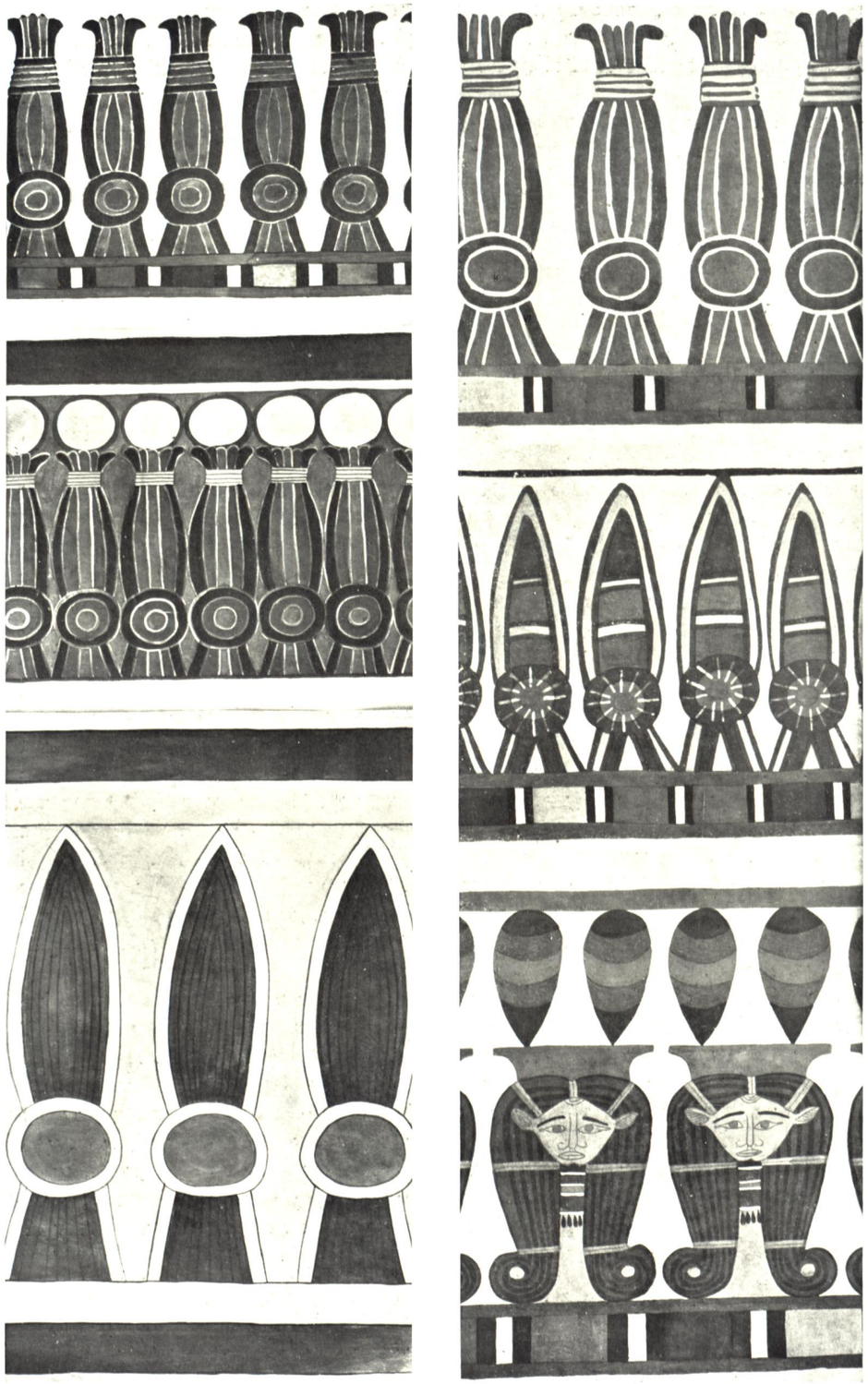

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ANCIENT EGYPT.

THE GENESIS OF COPTIC TWISTS AND PLAITS.

A STUDY of the development of plaited ornament as a decorative motive is one full of interest, and one which, in the past, has occupied the attention of far too few. Work along these by-paths of research is often useful, and may always be considered as legitimately supplementing the pioneer work of the archæologist.

The wonderful spread—one might almost term it epidemic—of the use of plait motives throughout Europe in the early centuries has, of course, been noticed and commented upon. But Prof. Lethaby is, I think, the only one who has suggested[1] that it is to Egypt we must look for the rise and spread of this truly wonderful development.

This considered opinion of a man who has made a life-long study of the evolution of design needs no support from me. But, on the other hand, it certainly lends a greatly added interest to our study of Egypto-Roman art, insomuch as we now know that we are at work upon things more rare than usual, the early links of a chain of rich fancy, which has given us the beautiful interlacing of Celtic and Scandinavian art, the knots and borders of Longobardic sculpture, of the Roman pavements and Byzantine panels, no less than the clever grotesques of the MSS. of the Slavic races.

It is really a matter of regret that the Professor left his enquiry where he did, for clearly there must be an origin for the elements which are so frequent in the art of Coptic times.

The present paper, then, is an attempt to glean a sheaf of scattered vestiges from more ancient times, which, even though imperfectly, will nevertheless give indication of the probable sources from whence the Copts drew their early ideas of plaited ornament.

That the *invention* of the plait is not to be ascribed to the Copts themselves must be premised. Nevertheless we are here but a step removed from the centre whence the plait went forth to the enrichment of European art, and an enquiry into the origins of some of the forms as they are found frequently on Coptic cloths, will at the same time deal with the broader question of the cultural influences at work in Roman times in Egypt.

The simplest motive, and the one from which it would seem obvious that the plait must have originally developed, is the simple twist (Fig. 1). It is surprising, indeed, that so obvious and simple a decorative contrivance should

[1] Lethaby, W. R., "The origin of Knotted Ornamentation," *The Burlington Magazine*, X, 1907.

be so persistently absent from archaic art. Not, of course, that it is entirely absent ; but, considering the great frequency of, for example, the meander and fret in Greek, and even dynastic Egyptian art, it is notable that examples of the twist are curiously few and far between.

Nevertheless, there are well attested examples of the occurrence in pre-Coptic times of twists not only of single strands, as in Fig. 1, but also of double and triple strands that parallel the two twists of Coptic age shown in Figs. 2 and 3.

It is significant that, although not very frequently, it is found in Greek as well as Egyptian design, as witness Fig. 4, a twist of single strands from an early Attic vase in the Metropolitan Museum, New York (first half of the VIIth century, B.C.)[1] and Fig. 5, from a Corinthian vase in the Louvre (VIth century, B.C.) a twist of double strands. The single twist in Egypt may be exampled by Fig. 6, found rarely on scarabs of the Middle Kingdom, and Fig. 7 from a Kalum pot (XIIth–XIIIth dynasty). Fig. 8, a scarab of the Hyksos period may be looked upon as a link with the XIIth dynasty scarab, Fig. 9.

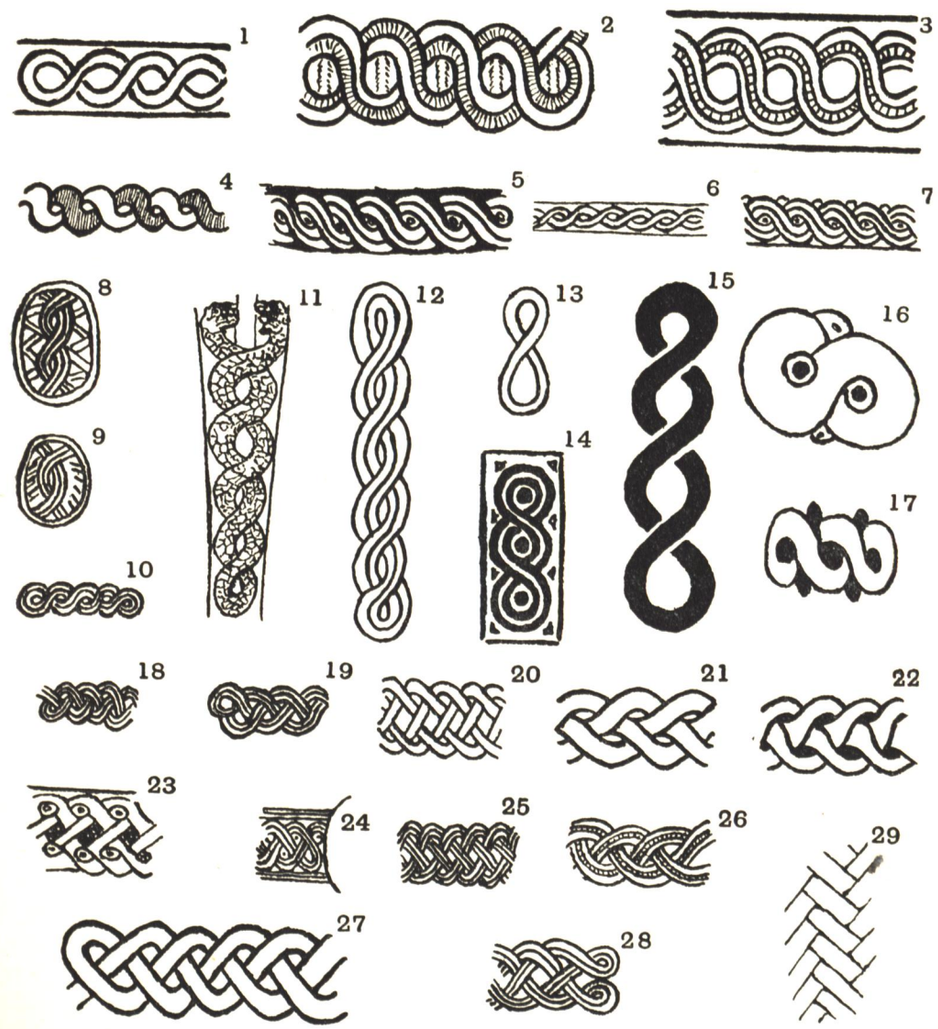
But it is to the Cylinder seals of ancient Babylonia that we must look for the earliest examples of the twist. In Syro-Cappadocian and Sumerian times it is of frequent occurrence. Yet here we are confronted, it would seem, with something more significant than a mere decoration. What exactly is the significance one cannot tell at present, but usually when it occurs on the cylinders it is not as a border. It is a complete figure, a twist of several nodes, the number varying from three to eight. Fig. 10, a twist of five nodes, is from a Sumerian cylinder[2] and is therefore at least as old as the VIth Egyptian dynasty ; fig. 12 is from the cylinder of the pre-Hyksos king Khandy, and 13 from a scarab of Apepy. Having found no twist of earlier age than these we are compelled to pause. As for its ultimate origin and symbolism it would seem probable that it may be closely associated with serpent worship (*see* Fig. 11) from a Sumerian vase.[3] Of the serpent I shall have something more to say. At present we may compare Figs. 10, 11 and 12 with Figs. 14 and 15 from Coptic cloths. I think the deduction is inevitable. As for the channel of influence, the occurrence of the complete twist in Greek art would suggest it. Fig. 16, from a plate in the Cabinet des Medailles, Bib. Nat., Paris,[4] is of VIIth century, B.C., and Fig. 17 from an amphora in the British Museum, dating from the VIth century, B.C.

Passing from the twist to the *plait* one must recognise that therein we have evidence of a distinct advance, not only in conception, but also in designing skill. This cultural step being obvious, it is all the more surprising to find that, if not actually on Sumerian, yet on Syro-Cappadocian cylinders, the genuine plait is already evolved (Figs. 18 and 19)[5]. Strangely enough, except for one example, the true plait seems to be quite missing from Egyptian decoration of pre-Roman days. As in the case of the twist, the vehicle of its introduction into Egypto-Roman art was doubtless the art of ancient Greece ; for it is not infrequent on Grecian mouldings, the *guilloches* (Figs. 20–22), and occasionally on pottery. Fig. 21 is from a fragment of a vase from Naucratis (VIIth century, B.C.)[6] and

[1] *Jour. Hell. Stud.*, XXXII, 1912, p. 370.
[2] Delaporte, L., *Cat. des Cylindres Orient*, 1910, Pl. XIII, Fig. 154.
[3] King, L. W., *Sumer and Akkad*, Fig. 29, p. 76.
[4] *Bull. Corr. Hell.*, 1895, p. 74, Fig. 2.
[5] Delaporte, L., *Cat. des Cylind. Orien.*, 1910, Pl. XXIX, Figs. 418 and 425.
[6] *Bull. de la Corresp. Hell.*, 1895, p. 81, Fig. 5.

Fig. 24 from a Proto-Corinthian vase of about the same century.[1] I give here a four-strand plait from a cylinder from Aîden which is perhaps a trifle older and probably Phœnician origin, Fig. 25 (*circa* 700 B.C.), and for comparison illustrate specimens of three- and four-strand plaits taken from Egypto-Roman and Coptic cloths in the Victoria and Albert Museum (Figs. 26–28).

Vladimir Bok in his monograph on Coptic Textiles[2] states that " The plait is met with on ancient Egyptian monuments beginning with the XIIth dynasty."



This statement would be more misleading than it is were it published in any less difficult language than Russian. As it is I am inclined to think that he must have had in mind the twist rather than the plait. And yet there is one undoubtedly genuine example of ancient Egyptian plaitwork that can be seen any day at the British Museum. I refer to the plait design as it appears on the

[1] *Jour. Hell. Stud.*, XXXII, 1912, p. 341, Fig. 18.
[2] Бокъ, В. Г., *Коптскія узорчатыя ткани.* Москва, 1897.

fragment of the beard of the Sphinx. Fig. 29 gives the scheme of plaiting which is clearly visible on the specimen.

We will next consider an interesting group of figures which occur frequently on textiles of Egypto-Roman and Coptic date, and which, although they vary in many ways, are yet apparently all related. A typical example of the IIIrd–IVth century on a fabric from Akhmin is shown in Fig. 30. A portion of a similar design of IVth–Vth century is given in Fig. 31, while Fig. 32, although quite dissimilar, is most probably a derivative from the same parent source, its less pronounced cruciform shape being probably due to its earlier date (IInd–IIIrd century). The relation between these forms and the quite simple form, Figs. 33 and 34, will, I think, be apparent. But I imagine that in this simple form we have it in its pagan aspect. For it has persisted and is found in Celtic and Scandinavian ornament, where it was considered by Worsaae[1] to represent the earth with its four corners. Surrounding this Danish example is a serpent with its tail in its mouth, the great sea-serpent lying in the all-surrounding ocean. To revert to the Coptic examples, Figs. 30 and 31 have this form interplaited with the cross, no doubt used as a Christian symbol.

For the origin of this motive we must, I believe, again look to Sumer, although there are practically no directly connecting links, that I know of, if we except scarab designs of the type shown in Figs. 35 and 36 (after XIIth dynasty), and I think these are inconclusive. An interesting comparison may, however, be made with the Buddhist symbol shown in Figs. 37 and 38. This is one of the Eight Glorious Emblems or auspicious symbols frequently figured in Buddhist art and iconography.[2] It also occurs as the lucky diagram *Srīvatsa*, the symbol of the tenth Jina (Sitala) of the Jains, and in China as the Buddhist knot (Chang), or the sacred entrails (Fig. 39).

This Chinese sign was doubtless introduced by the Buddhist missionaries who reached China in the Ist century A.D. How the symbol arrived in Buddhist India one can only surmise ; but one cannot help remembering that Buddhism was still in its infancy when, in 329 B.C., Alexander made his momentous inroad, an event which impressed Indian art and decoration most strongly. Also we know that commerce was carried on between India and Babylonia from quite early times, and we find that in the IIIrd century B.C. the famous Buddhist Emperor Asoka claimed that missions sent by him to Greek kingdoms had resulted in conversions to Buddhism. These facts prove an amount of intercourse quite sufficient to account for the passage of this symbol. And although apparently not to be found in Greek ornament, yet if we look from these examples to that shown in Fig. 40, we cannot but notice their striking resemblance. Moreover, I think I may suggest (with probability on my side), that in this Sumerian figure we have the prototype of even the Coptic examples.

The figure is taken from one of the three most ancient specimens of Sumerian glyptic art yet known, one of the seals of the patési Lugalanda (about VIth–VIIth dynasties Egyptian). The somewhat laboured attempt at an interpretation of this sign by M. Allotte de la Fuije[3] may, I think, be put aside. It is far more likely to be the expression of a religious idea than a cryptic rendering of the artist's name. It may even contain the idea of Worsaae of the four corners of the

[1] " Danish Arts."
[2] Waddell, *Buddhism in Thibet*, p. 392.
[3] *Rev. d'Assyr.*, VI, No. 4, p. 117.

earth, but I believe that all these knot figures embody the idea of eternity, or perhaps, at least, longevity.

There is one more motive found on Coptic textiles of which I must speak. I have left it until the last because it is perhaps the most interesting of all. Figs. 41 and 42 show it as it appears on Egypto-Roman and Coptic textiles, and it will be recognised immediately as a familiar motive not only on these fabrics but also on Roman mosaics from the IInd century A.D. onwards. It is also of frequent occurrence later among Celtic and Scandinavian plaitwork as noticed by Dr. H. Colley March.[1] It is one of the seven World Ravishing Gems of Buddhism, and, in fact, is found so far afield as among the Mound builders of the American continent. It is sometimes called, in English, the duplex, in French *l'entrelac*, and Sarre enigmatically terms it the " Lieblingsmotive."

This motive, more elusive in archaic art than any, has yet I believe a history that may well be said to be more ancient than any other known symbol. For it is, I am convinced, derived directly from that ancient of days, the Swastika. That this is so can best be demonstrated by examples. Figs. 43 to 46 show the stages of development in as simple a form as can be. It could, of course, be proven at greater length, but the present is hardly the occasion. The Swastika is, of course, a universal symbol of fire and motion, *i.e.*, the sun ; and its derivative must be allowed to have, in some measure at least, a similar significance in pagan symbolism.

I have mentioned its occurrence on Roman mosaics, and this is most significant for our enquiry. For we are thus swept right past Coptic and Egypto-Roman art without touching it, so to speak, and we find it on a Ist century mosaic at Pompeii (Fig. 47)[2] in the Isis temple, which was rebuilt after the earthquake of A.D. 63.

There would seem to be an entire absence of this motive from both Greek and ancient Egyptian ornament, but I give an illustration of a gold ring from Selinous[3] (*circa* 1500–1000 B.C.), which is sufficiently like to afford comparison (Fig. 48). And from Egypt I give an impression of a Kahun sealing (XIIth dynasty).[4] The latter (Fig. 47) is certainly half way between the Swastika form and our figure.

But for the identical motive we must come to more recent times than this last. Again we go to ancient Babylon for our illustration, and we find here not indeed the simple duplex, but an artistic conception obviously based upon the same theme (Fig. 50). Incidentally it may be observed that this is, so far as my investigations have gone, the earliest example of knot work yet known. It might well be thought to be from some Celtic or Scandinavian cross so excellent is it. But it is taken from a Syro-Cappadocian seal (dated *circa* 1926–2225 B.C.), in the Bibliotheque Nationale.[5] The fact that this is a design more complex than the simple duplex argues that the latter must, at some period, have preceded it. But to find it in an earlier age we must look to pre-mykenian Crete.

Sir Arthur Evans[6] tells us that " of the origins of our complex European culture this much at least can be confidently stated. The earliest extraneous sources on which it drew lay respectively in two directions—in the valley of the

[1] *Trans. Dorset Field Club*, XXV.
[2] From Riegl, A., *Stilfragen*, 1893, p. 310.
[3] Fougères, G., *Sélinonte*, 1910, p. 42.
[4] Petrie, W. M. F., *Illahun*, 1889–90, Pl. X, No. 190.
[5] Babelon, E., *Guilde illus. du Cab. des Med.*, 1900, p. 32, and Delaporte, Pl. XXXVIII, Fig. 649.
[6] " New Archæolog. Lights on Orig. of Civilis. in Europe," *Smithsonian Report*, 1916.

Nile on one side, and in that of the Euphrates on the other." This being so we need not be surprised to find that here on the " doorstep of European civilisation " the duplex may be traced a step further back into the past. Fig. 51 represents the design of a steatite seal from Hagios Onuphrios,[1] and considered to date from the Early Minoan III period (IXth–Xth dynasties Egyptian). It will be seen that this design consists of the simple duplex with the addition of an interlaced square. If we now glance at the next figure we shall observe that the figures are identical, and yet this latter is from the IVth century Romano-British pavement at Wellow near Bath (Fig. 52). That the Cretan example is the prototype of the Roman there cannot be any doubt. A seal of ivory found at Hagia Triada, and dating from the second part of the Ist Minoan period, is illustrated by Mosso,[2] which appears also to be inscribed with this form.

Before concluding one more illustration must be referred to. It is shown in Fig. 53, and is taken from an asphalt relief discovered by de Morgan at Susa.[3] Dr. Capitan considers this to be an expression of the same idea, and it must be admitted that it is more than probable, for undoubtedly it is composed of two interplaited ovals. The fact of its being a representation of two serpents is, too, in my opinion, a point in favour of this. It is ascribed to the epoch of Naram Sin, equal to the IXth dynasty.

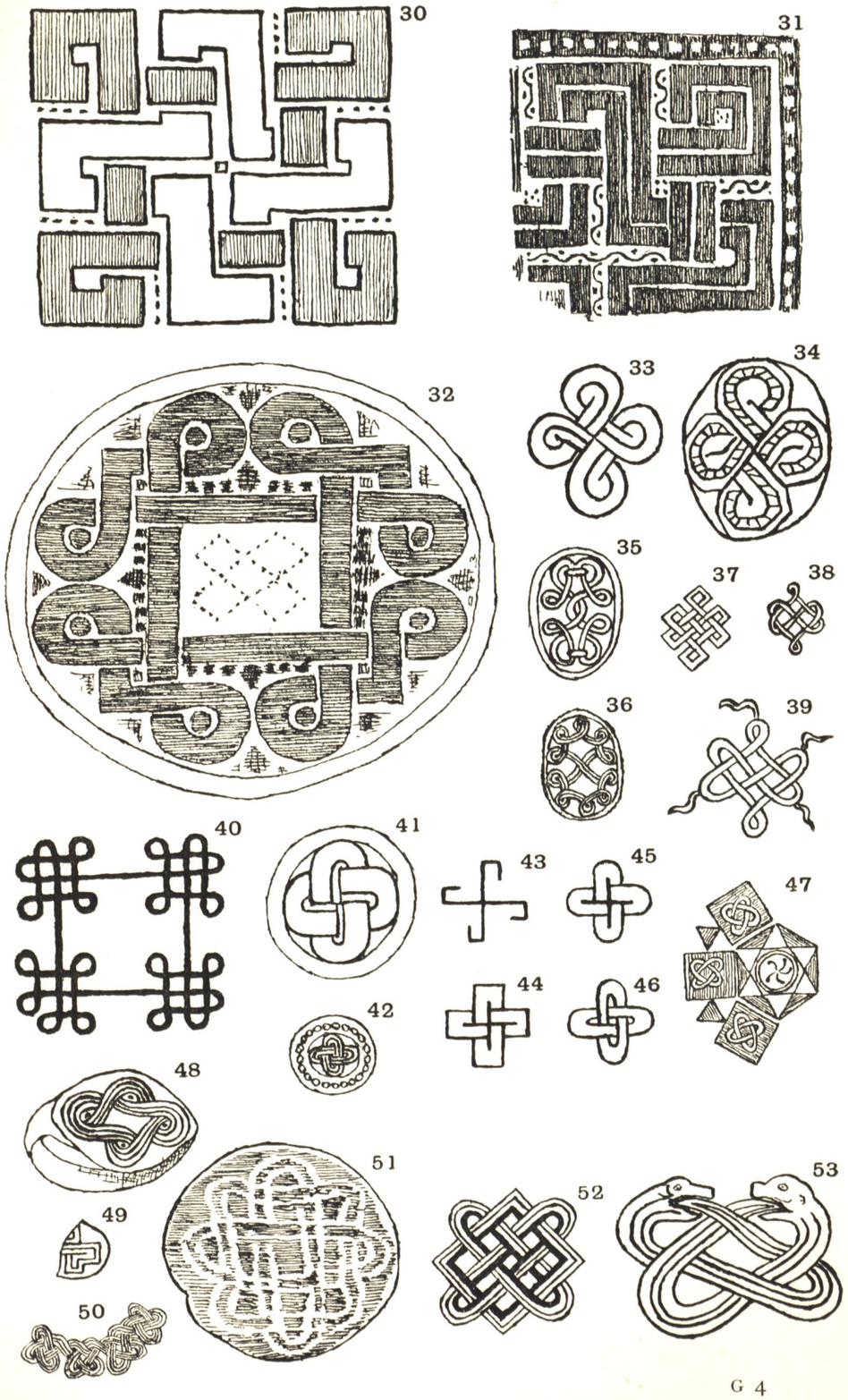
Looking back over the field of enquiry that has been covered it seems obvious that certain general conclusions may be deduced.

The Copts, and the Egypto-Romans before them, derived these decorative motives in their art, if not actually from Roman sources, at any rate from a common source with Rome. In this connection the significance of the evidence provided by the mosaics cannot be overestimated. For we know that the Romans obtained their art of mosaic from the Greeks about 80 years B.C. Moreover, we know that the source of inspiration was *Alexandria*, which town passed under Roman rule at that time.

The decorative features we have been considering are in Egypt found with greatest frequency on the textile fabrics. But in Roman art they are most closely identified with the mosaic pavements. So much so that there is practically no doubt that the Romans derived them, with the art itself, from Alexandria.

We must therefore conclude that Egypt obtained her art inspirations from thence, also owing nothing to purely Roman but much to Romano-Alexandrian influence. What is more natural than that the city of Euclid should be the centre from whence these advanced designs should proceed, designs which, based upon the symbols of archaic cults, were revivified and developed in the hands of skilled artists. Alexandria's position made it a focus of influences from East and West. Not only Greeks, Romans and Egyptians, but representatives of eastern lands congregated within its precincts. There is no doubt that many ancient cults were tolerated, and may have brought into its decorative art the symbolism of archaic faiths. Of these quite the most popular was the cult of the Serpent, the Agathodaemon and Uraeus, sacred to Serapis and Isis. Shrines existed there whereat the cult was practised, and the two serpents are frequent features on coins of the period.

[1] Evans, A. J., *Cretan Pictographs*, 1895, p. 107, Fig. 84.
[2] Mosso, A., *Palaces of Crete*, 1907, p. 249, Fig. 117A.
[3] de Morgan, *Recherches. Del. Perse*, XII, Fig. 394, and XIII, Pl. XXXVII.



But we know that serpent worship was a prominent cult in the religious system of the Sumerians (refer back to Fig. 11), and with the ancient Persians we have seen that the two were linked into the prototype of the duplex. Space will not allow of exhaustive proof, but I am convinced that the motives we have been considering all originally embodied some phase of the cult of the serpent. The twist, the plait and the interplaited cross of ovals were all part of the ritual of the archaic counterpart of Isis and Osiris.

On Egypto-Roman and Coptic things they have, of course, lost their pagan significance, and are probably used merely as decorative motives—with one exception, the duplex. This, by virtue of its being cruciform and dual, was probably, as Dr. Colley March says, adopted as an emblem of the two-fold nature of Christ.

Whether this was so at so early a date is not certain. But it is certain that both in pagan and Christian art these non-terminate plait motives had the power of auspicious symbols, conveying the idea of good-luck. Particularly was this the case with the duplex; but we find, in these days, its popularity has waned—its parent, the Swastika, has outlived it.

CYRIL G. E. BUNT.

[These conclusions on the Sumerian being the earliest forms of the twists and plaits accords with other facts of their distribution. The formula which seems to agree with all the cases is that the twist and plait is a Central Asian motive (*see* the wickerwork screens in Kirghiz tents); that from there it passed down the Euphrates, also into Syria, and first into Egypt under Hyksos influence. Plaits and twists were unknown in Italy until the Dacian captives were brought in and set to mosaic work; plaits were brought from the north into the basket-work capitals of Justinian, and the round plait in architecture only occurs in true Gothic work in Italy, the Lombard plait being angular, rushwork and not osiers. In Ireland the spiral is alone in the pagan age, and the plait only comes in after Norse influences of the Christian period.—W. M. F. P.]

THE SPHINXES OF TANIS.

IN the *Annales du Service*, 1917, M. Daressy opens the question of the peculiar type of art found in the sphinxes of Tanis, the fish-offerers and the Fayum statue. For figures of these see ANCIENT EGYPT, 1916, pp. 188–192, and plates. He points out that Zōn or Zoan is distinct from Hauar or Avaris in the Memphitic list, and that there is no reason to identify them; and that the absence of any mention of Zon on the monuments of Tanis, and of any works of the great XVIIIth dynasty there, seems to show how unimportant the place was in early times. Suddenly in the XIXth dynasty it was started as a northern capital by Ramessu II, and filled with sculptures brought from other places. Of the early statues five have dedications belonging to *Onkhtaui* at Memphis, the later works of Ramessu II were made for the Heliopolitan gods, and a statue is dedicated to Upuat of Siut and Hathor of Dronkah near by. From El Kab has come a sphinx in white silicified limestone exactly like the Tanite sphinxes in work and dimensions. All these facts result in detaching this peculiar style of work from Tanis, and suggest that it is more probably southern.

HEAD OF TANIS SPHINX.

HEAD OF GALLA WOMAN.

The ground is thus cleared of an hypothesis that has confused the subject for fifty years past. The southern source of such work at El Kab paves the way for our recognising in the "head of a Galla woman" (published in Maspero's "Struggle of the Nations," p. 233) the same type as in the sphinxes from Tanis. We require now an enquiry as to the sources and limits of this type in the south. Mr. Wainwright was struck by the similarity to the Tayesha, who were the body-guard of Osman Dagna, a Semitic African tribe.

If now we are to regard these sculptures as representing a Sudani people, it is clear that they belong to an invasion between the VIth and XIth dynasty, as there is no other period likely before the Hybros age when these figures were appropriated. The break-up of the Old Kingdom was due to Mesopotamians pressing in from the north—using button-badges, and to the Sudanis from the south, who took up Egyptian art for their own purposes. Similarly the break-up of the second prehistoric civilisation was both Elamite and Nubian; the end of the Bubastite age was invasion from Ethiopia and Libya. To the weak, misfortunes seldom come single.

W. M. F. PETRIE.

ALEXANDRIAN WORLD MAPS.

As Alexandria was the centre of geographical learning where the world maps of Eratosthenes (*circa* 200 B.C.) and Ptolemy (*circa* 150 A.D.) were published, it may not be out of place to insert a short note on the possible survival of the former. The question of the authenticity of the actual maps accompanying the text of Ptolemy has recently been much discussed, but no one so far as I know has suggested the possibility that a copy of the earlier Hellenistic world scheme may still exist. There is in the Harleian collection in the British Museum a very remarkable map of the world drawn in the 9th or 10th centuries. It seems to be the work of an Anglo-Saxon scholar—that is, it must be his copy of an earlier map. The way the cities are represented within their walls has resemblances to the Madeba mosaic plan of Palestine, and the prominence of such places as Alexandria and Constantinople all show that there was a Byzantine or Hellenistic original. Another point of interest is the fact that some of the places in North Africa, to which Prof. Petrie called attention as being mentioned in the old tradition of the peopling of Britain, are named on this map.

The map of the world given in Prof. Breasted's *Ancient Times* (1916) as the world according to Eratosthenes, seems to me to have more than an accidental resemblance to our Saxon map. In it we have an oblong world surrounded by ocean ; India is at one end, and the Mediterranean Sea enters at the other. It is still more remarkable in comparison with the Harleian map that the Caspian Sea is shown as connected with the ocean by an inlet from the north. Syria and Mesopotamia are near the centre of this world, which lies on the ocean as a rug rests on the floor. Furthermore, on the Saxon map there are a number of loosely-drawn lines, which are frequently roughly parallel, and at right angles to one another. The names of countries and cities seem to have been set down in relation to these lines, which indicate boundaries or position. Now Dr. Breasted writes of Eratosthenes : " His map of the known world, including Europe, Asia and Africa, not only showed the regions grouped about the Mediterranean with fair correctness, but he was the first geographer who was able to lay out on his map a cross-net of lines indicating latitude and longitude." It seems evident that the map in the Harleian collection must have had for its source a map with such lines upon it. It may be that the Saxon map follows some original constructed more or less in harmony with the theories of Cosmas, the 6th century traveller, who published at Alexandria his Christian scheme of geography about 550 A.D. It is probable, however, that Cosmas reverted to the flat-land of Eratosthenes rather than inventing it afresh, and in any case the Saxon map is too detailed and, indeed, too correct to depend on anything but a classical source. There is a photographic reproduction of the Harleian map in Trail's *Social England* and a small text block in the *Encyclopaedia Britannica* (" Maps ").

W. R. LETHABY.

THE SUBTERRANEAN PASSAGES OF ALEPPO CITADEL.

ANCIENT Aleppo (the Egyptian Khalebu, the Greek Berœa) is supposed to have stood entirely on the partly natural, partly artificial mound now known as the Citadel, which measures 275 × 160 m. at the summit, and about 40 m. above the level of the town. This seems probable since no pre-Arab remains are to be seen in the town, although Aleppo is known from Egyptian and Babylonian records to have been of extreme antiquity.

Under the Arab rule of Malik ez-Zahir, the mound was fortified, or more probably re-fortified ; a deep moat was dug round it and a strong defensive wall was built round the summit. The wall of Ez-Zahir still stands, but the interior of the Citadel is in ruins, the only modern building of any size being a Turkish barrack. The remainder is a mass of debris of Arab and Roman age which could easily be excavated now and would well repay a thorough examination.

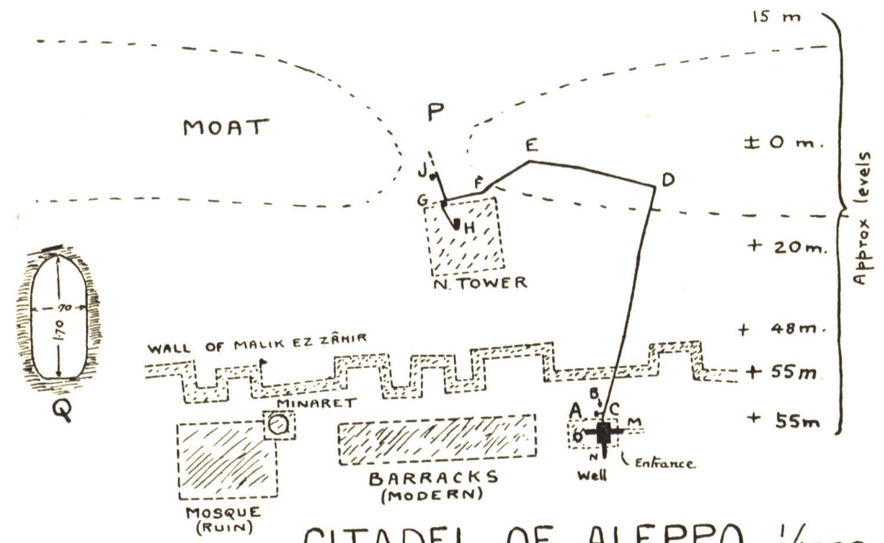
ALEPPO CITADEL FROM THE S.S.W.

The Arab Commanding Officer told me that he had found the entrance to subterranean passages near the barracks, and invited me to explore it as he was not keen on doing it alone. I accordingly called on him with Lieut. Lee-Brossé of the 1st Spahis. He first led us to a chamber (A) close to his quarters, at the east end of which was a large rectangular well, the top being solid masonry and about 4.50 m. north and south, by 3.75 m. east and west.

The Arab Officer then showed us the entrance to a gallery built against the outside of the east wall of the chamber. This gallery was almost stopped up with rubbish, and sloped downwards at an angle of about 20°. It soon turned to the left at right angles, and began to follow round the outside of the well in a counter-clockwise direction with windows opening into the well at intervals in each circuit. At first this gallery was in a very bad condition, but became better and freer of rubbish as we went down. After two circuits we came to a small vertical shaft which we climbed down, after which the passage, now much larger, and with a well-cut staircase the whole of its breadth (about 3½ m.) continued to wind downwards. At 16 m. depth the gallery was no longer built

in the rubbish, but cut in the soft limestone. This gives an approximate idea of the depth of artificial deposit on the Citadel. Although the passage was now in the rock, its tendency to crumble has necessitated arches and patches to hold up and hold back the dangerous portions. As we went still lower, the patches were made in pottery bricks, 0.23 m. long by 0.03 m. deep, which seem to be Roman. The level of the commencement of the pottery revetting was 26 m. below the ground level of the Citadel. About this level a gallery, now obstructed, appears to run southwards. At 30 m. we again came to a gallery having a masonry arch at the entrance, and then apparently running north in the rock. It is now totally stopped up with stones and rubbish. At 37.80 m., a very small passage opened out on the right of the main passage ; the roof had fallen in many places and was very rotten. I crawled in for about 25 m. almost due north and found the end. It apparently was a trial gallery left uncompleted. A few metres farther on the main gallery ends in a pile of rubbish, though it may continue a little further. Here we went down a small vertical shaft, which could be covered by stone slabs which lay beside it. At a depth of 3.50 m. we reached a small horizontal passage (H) which went back under the main gallery for about 1.50 m. Here a larger gallery ran left and right. We first turned to the right, and after about 3 m. we came to the well, being now almost at the bottom of it (*i.e.*, within 7 ft.). I was lowered down into it and could see straight up the shaft ; this was 41.34 m. below the surface of the Citadel. The curious part of the shaft was that the four sides were corrugated, and gave the effect of looking up the concertina extension of a kodak. The bottom of the well was partly filled with stones and filth dropped down from above, and beneath the shaft the depth of the water varied from a couple of inches to a foot. On the east, south and west sides of the bottom of the well, large galleries about 2 m. high and 1·50 broad, ran away for a unknown distance. The entrances of these had masonry arches, made without keystones, and the galleries themselves were well "rendered" with cement. I could not follow these more than about 10 m. as the water became deeper owing to there being less rubbish the farther one goes from the well-shaft. The stench was bad, but with thigh boots one should be able to follow these passages to their ends wherever they may be. These are shown at (M, N, O), in accompanying plan. It seems as if these were gigantic water conduits for the supply of the town. With sufficient time I believe that the exits of these conduits could be discovered even without following them internally, as they must communicate with the river somewhere. We only had three days at our disposal so it was out of the question for us to search further, as we had other work to do. We then returned to the branch passage at (B) which, as has been remarked, was about 2 m. above the water level of the well, and followed the passage (BD). The section of this gallery is shown at (Q), and the whole of it is very finely "rendered," its primary object being obviously a water-channel. After proceeding north for 58.50 m., it turns west for 31.40 m., and then south-west and west-south-west as shown at (DE, EF and FG). At (G) the passage turns sharply to the right. Here after 6.60 m. it is paved with large blocks. Below these blocks there is a small channel, 0.35 by 0.35 m. protected by a strong iron grating running forward. The whole gallery is obstructed about 1.30 m. further on, and no more progress was possible without excavation. At this place we found a limestone block 0.75 by 0.60 by 0.28 m., having a cufic inscription on it in relief, the block being upside down and not belonging to the masonry. Lieut. Brossé copied this as far as he could, and I can furnish a copy to anybody

who specializes in this class of inscriptions. At the point (J) there is a small hole opening out of the gallery. I squeezed through this, and found myself at the bottom of a circular shaft running vertically upwards (about 1 m. diameter, and 5.10 m. high). I climbed up this and found the top covered by large slabs of stone which I could not shift. I noticed the soil here was softer and more crumbling and earthy, which showed that the top of the shaft was no great distance below ground level. We then returned to the point (G) where a small opening led into another shaft running vertically upwards. This shaft, 1.20 diameter, was 7 m. high. At the top of the shaft on the north there was a sort of doorway of limestone about 0.80 m. wide, the jambs being smoothly dressed. We could not see the height owing to its being partially filled up with stones and rubbish. The right jamb of the door has a mason's mark, much resembling the



CITADEL OF ALEPPO 1/1000

Egyptian *'onkh*, 0.23 m. long. The chamber was almost entirely filled up, but could easily be cleared. On the other side of the shaft running up at an angle of about 50° and 150° east of north, was a large gallery roughly cut in the earthy limestone and 10 m. long. At the top of this, turning to the left, we could just squeeze into a small masonry antechamber (H). This was separated from an apparently larger chamber by a heavy basalt door, leaning at about 60° outwards from its frame which consisted of four blocks of basalt. The dimensions of the door were 1.38 m. high ; 0.75 m. wide and 0.17 thick. On the west and on the inner side there is a cruciform recess for a bolt. Above this lock recess is a hole for the door pivot ! The roof of the antechamber consists of a circular column of basalt. The inner chamber was very much obstructed by rubbish, but by crawling in I could see that the roof by the door consisted of basalt 0.42 m. diameter, and a square sectioned block of the same material. The inner chamber seems to lead into another smaller chamber roofed with slabs. This place was too unsafe to examine thoroughly, without a certain amount of clearing and shoring, which we had not time to do.

In the accompanying chart the dotted parts show the buildings, etc. above ground ; they have been enlarged from a military map, and I do not vouch for

their accuracy. The underground passages were surveyed by us with a prismatic compass and are fairly accurate. It will be seen that the chamber at (H) comes nearly under the foundations of a small square Arab tower, now in ruins, on the slope of the Citadel. Point (H), however, must be at a much lower level, and be connected to the foundations of a more ancient building. (The Arab entrance to the north Tower was on its south side leading straight up into the Citadel. This was blocked up, and we could not find its other end in the Citadel.) At the point (J) the level of the moat is distinctly higher than elsewhere, and I do not think that the gallery at (J) is very deep below moat level. It is very probable that the passage runs out under the town.

I think the function of the gallery (B D E F G J) was to fill the moat. This would be done automatically when the water rose to sufficient height in the well. The subsidiary passages and shafts (J and H) were probably cut to connect buildings then standing with the Citadel, making the conduits serve a double purpose. That danger of invasion from these passages was apprehended is obvious, since in the spiral well passage small shafts, mentioned earlier, were constructed, so that the passage up into the Citadel could be easily blocked. As to the date, although the Arabs may have added and adapted certain parts of it, I cannot think that this was their original work. It certainly would repay a detailed examination, as all the rubbish could be basketed along into the well chamber and removed from there.

I can get no information as to whether this has been examined before; the local inhabitants are entirely ignorant of it, except that one old Arab told that the Citadel was connected underground with the Bāb Antakiyeh. It is possible that the Turks or Germans during the war may have examined these passages. I should be very glad to hear if anything is known further of this matter.

R. Engelbach,
Capt. R.E. (T.R.).

KHEKER FRIEZES.

[Number references are to the " Topographical Catalogue of Private Tombs of Thebes," by Gardiner and Weigall. A.E., *Ancient Egypt.* C.F.Y., Carnarvon, *Five Years' Explorations at Thebes.* D.P., Davies, *Ptah-hetep.* K. King's Tomb. L.D., Lepsius, *Denkmäler.* P.D.A., Petrie, *Decorative Art.* Q., Queen's Tomb.]

The extreme upper portions of the walls of painted and sculptured tombs in the XIIth and XVIIIth dynasty, and also more rarely in later times, were usually finished off with a peculiar form of decoration, commonly known as the Kheker ornament.

The word Kheker occurs fairly often both in Old Kingdom and in later hieroglyphs in connection with the toilet, and also in the plural form as *Khekeru*, meaning *ornament*, which word has the figure of a Kheker as its determinative. It is this word for *ornament* that has given its name to this distinctive variety of Egyptian ornamentation.

The form of the Kheker most often thus employed in the Theban Necropolis is that shown in Fig. 1, where it seems to represent a series of reed or plant stems tied together at the tops and gathered in again close above the base, below which they spread out once more. Another suggestion for the meaning of this decoration is that it represents the fringe or tassel of a carpet or mat, the roundel above the base being a knot. The plant theory is probably the more satisfactory explanation of the form and was first suggested by Prof. Petrie, who wrote: " Suppose a screen of papyrus stems, the roofing stems tied on to the uprights and the loose wiry leaves at the head tied together to keep them from straggling over and looking untidy. Here we have all the details of the Kheker ornament simply resulting from structural necessity. The leaves are gathered together at the lower tying; and there the end view of the concentric coats of the papyrus stems of the roof are seen as concentric circles, above which the leaves bulge out and are tied together at the top." (P.D.A., 101–2.)

This view of the origin of the Kheker ornament finds support in the fact that the Kheker frieze is practically always found at the top of a wall in a tomb. It occurs, moreover, in painted scenes as a free standing ornament to the tops of doorways and shrines when such are depicted on tomb walls (111 and Q. 36, 44, 52, 55). In three instances (Puimre, Amunezek, Menkheperasenb, and perhaps more), however, a row of Khekers serves as a kind of low square fence or enclosure in the scenes of funeral ceremonies in the inner chambers of Tombs 39, 84 and 112. It is also to be seen running down one side of the interior of a shrine in Tomb Q. 52, Thyti. In the tombs of the Old Kingdom no example is known of the use of a Kheker frieze to ornament the upper portion of the walls of a tomb, although it is employed to decorate the tops of shrines and doorways, etc., when such are depicted on the tomb walls. The Kheker is always of the pointed variety, very similar to that shown in Fig. 4, in shape but not in colour, but usually with two roundels

at the bottom, placed one below the other, of which the lower one takes the place of the base of an ordinary Kheker (L.D. ii, 101). In the tomb of Ptah-hetep, however, a Kheker with the base as shown in Fig. 5 is used for the sign WSHT (D.P., I, xviii).

A peculiar headdress sometimes worn by dancers in scenes in the tombs of the Middle Kingdom is also suggestive of the Kheker ornament, especially its upper portion (C.F.Y. viii; A.E. 1914, 126).

In the Middle Kingdom when the Khekers began to be employed as a frieze for tomb walls, the splay-topped form was that most commonly in use (Fig. 1). This variety is also the most common in tombs of the XVIIIth dynasty in the Theban Necropolis, though the pointed variety is still employed in minor positions. During Ramesside times, the pointed form reappears again as a frieze, but only in the Royal Tombs, the splay-topped form still remaining in use in the private tombs.

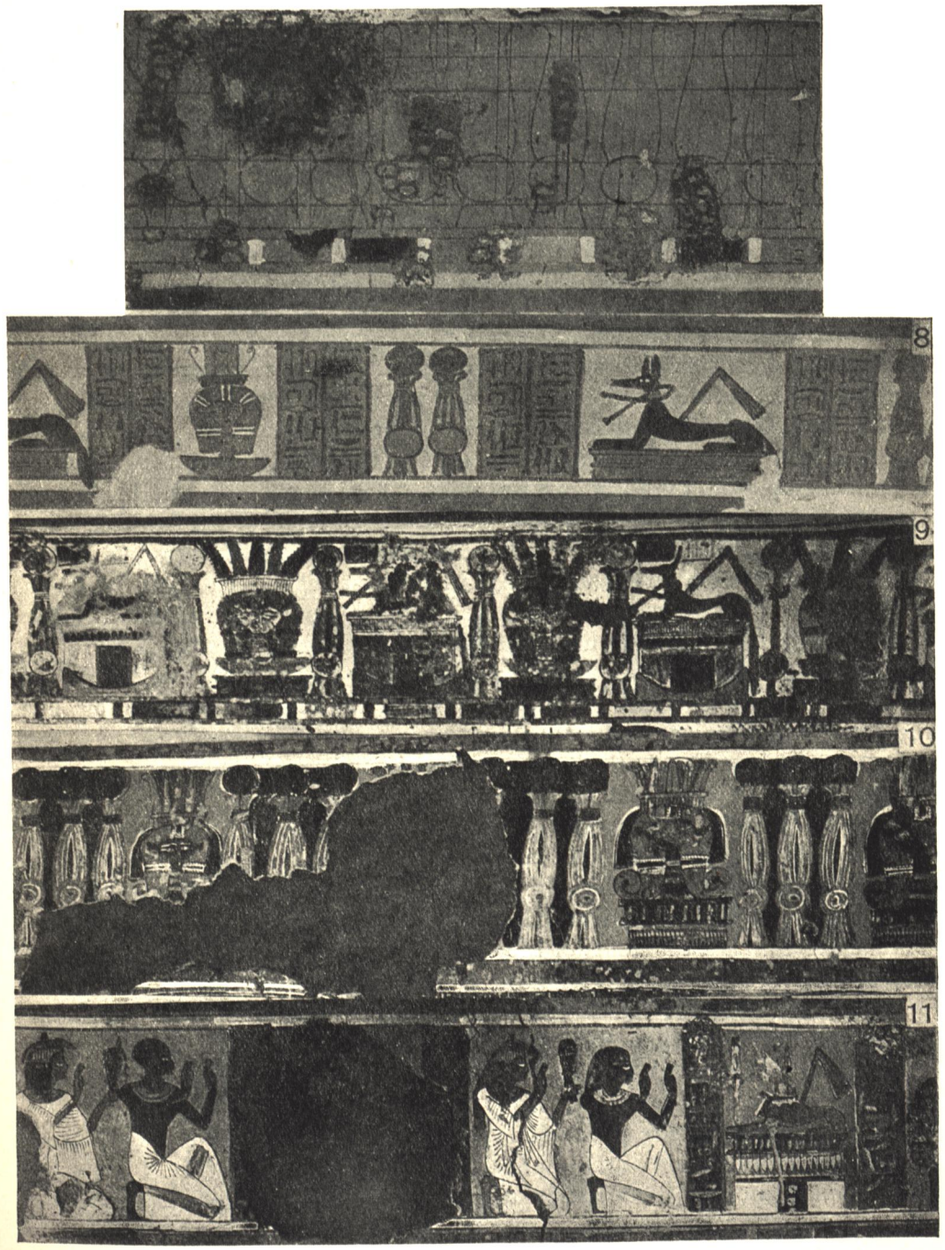
Splay-topped Khekers are always drawn at the top of a tomb wall in a row, with their bases touching, or almost touching, one another. The colouring until rather beyond the middle of the XVIIIth dynasty is constant, namely, blue outside, red inside and green between, the tie bands being similarly coloured with bands of blue and green above and below a middle band of red, five bands in all. The roundel at the base is also painted with an outer circular band of blue, an inner one of green and a red centre.

Towards the end of the XVIIIth dynasty and also in the Ramesside period, the roundels of the Kheker ornament were commonly painted of one colour only, red or yellow, though the remaining portion of the Kheker was coloured in the old way. We have, however, six exceptions in the Necropolis in Tombs 38, 76, 77, 91, 147 and K. 22. In the last of these tombs the Khekers forming the frieze at the northern end of the outer chamber are coloured blue, green and white. It is possible, however, that it was intended to eventually add red, and thus give the frieze the normal colouring. In the roundels of the Khekers in Tombs 76, 77, 91, 147 and K. 22 only two colours were intended and used, *i.e.*, red and blue, the red being in the centre and predominating.

In some of the tombs of the end of the XVIIIth dynasty, and in most of those of Ramesside date, instead of being painted with the usual stripes of blue, green and red, the tie of the Kheker is painted entirely in yellow and the stripes or bands are indicated by lines of red or black (Fig. 2). The earliest date at which the yellow tie first appears in Khekers in the Theban Necropolis is the time of Thutmosis III (Tomb 112), but it appears more frequently in the time of Thutmosis IV, as may be seen in Tombs 58, 75, 76, 77, 89, 90, 91, 116, etc., though in some tombs of this date, and even later, the usual five coloured bands are still to be seen. In three tombs (76, 84, 112) Khekers with the usual blue, green and red ties are found on some of the walls, while on others the ties are coloured yellow. It is interesting to note that the lines drawn on the yellow ties to represent the former bands of colour are not always true as to number, showing that the old features were already being forgotten.

In most cases, as shown in uncompleted tombs, the Kheker pattern was set out with the aid of six horizontal lines, the top and bottom ones of which determined the height of the Kheker. The two lines below the top one marked out the proper width of the tie, and the remaining two fixed the position of the roundel at the base of the ornament. These lines were always set out with the aid of a cord soaked in red ruddle (21, 22, 43, 78, 82, 112, King Haremheb).

Owing to the irregularity of the ceiling, only five of these horizontal lines were drawn in some tombs, the usual top line being omitted, with the result that the height of the Kheker frieze varies considerably on the same wall. The usual



7, Tomb 88; 8, Tomb 255; 9, Tomb 51; 10, 11, Tomb 45.

reasons for this were either poor work or the excessive hardness of the rock which prevented a level ceiling being cut.

In Tomb 82 there are seven horizontal lines provided for the proportioning of the Kheker frieze, the extra one running through the middle of the roundel. There are also seven lines in Tomb 78, the seventh line marking the width of a disc over the Kheker.

It rarely happened that the artist kept strictly to these lines. The top of the Kheker frequently projects above the top line and the roundel is frequently below the space provided for it between the two guiding lines. It would appear, therefore, that these horizontal lines sometimes served as rough guides only and not as definite boundaries. Hence the great variation in the position of the roundel and tie that is often met with in the Khekers on the same wall.

The distance between the topmost and lowest horizontal lines is found to vary greatly. Taking a number of these distances and averaging them, it has been found that the three heights for the Kheker frieze that were most commonly in use were 180, 196, and 204 millimetres.

In careful work, three, and sometimes five vertical lines were also drawn on a tomb wall to ensure the proper width and proportion being given to each Kheker. In every case these lines were carefully drawn in red paint with a fine brush, which lead to their being easily obscured when the background was painted in. When three lines were used the middle one ran down the centre of the Kheker and the remaining two fixed its outer limits. In cases where five lines were employed, the additional two marked the inner edge of the blue stripe, which in most cases splays outwards at the extreme top of the Kheker. It is probable that these vertical lines were utilised in most of the tombs which show better workmanship, but, if so, they have in most cases been obscured by the background, which as a rule was painted in last, doubtless for this purpose. Tombs in which these lines can still be seen are Nos. 22, 87, 88, 112, 201 and 251.

Lines for the spacing of pointed Khekers (four in number) can be seen in Q. 38, and it may be noted here that as pointed Khekers have no ties, four lines are sufficient to set them out.

On one wall at least in the inner chamber of Tomb 42 (Amenmose), the Kheker frieze was drawn on similar squares to those used for the purpose of figure drawing. This was a very unusual proceeding in the Theban Necropolis, and there is apparently only the one example.

In rough work, the whole Kheker was merely outlined in red before the colours were applied, but in the more carefully finished tombs additional lines were added to mark the limits of the coloured bands (Tombs 42, 72, 77, 89, 201, etc.).

In most cases after the colours of the Khekers were painted in, a white line was placed over the edges of the stripes of colour to hide their junction and also to emphasise their colours. These white lines were very carefully put on in some tombs and in others very roughly, so that they vary much in thickness and regularity. The outside of the Kheker was rarely outlined in white, with the exception of the margin of the roundel.

In one tomb (42) the artist evidently ran short of red paint when drawing the outlines of his Khekers and employed blue instead for the purpose.

It seems that the Kheker ornament in a few of the better finished tombs was subject to definite proportions, as in the case of human figures. For instance, the top of the ornament from the tie upwards should be equal in height to that of the base as measured downwards from the bottom of the roundel; also the depth of the tie should be the same as that of the top and base. The diameter

of the roundel was generally half as wide again as the height of the upper portion, base and tie of the Kheker when drawn perfectly round; in most tombs, however, it assumes a slightly elliptical form. The body of the Kheker appears not to have been subject to any definite proportions, hence the Kheker ornaments in various tombs on comparison show an apparent divergence in proportion, some appearing slightly attenuated and others the reverse in form.

The Kheker friezes in Tombs 45 and 260 present a peculiar feature which the writer has not been able to find in any other tomb, namely, three small black spots placed above the three middle bands of colours at the apex of the ornament and also a series of five similar spots down each vertical edge of the tie (*see* six on left of Fig. 1). It appears to have been a refinement in the decoration that was very rarely carried out, as, in the two tombs in which this addition appears, not all the Khekers were treated in this manner. As the two tombs in which these spotted Khekers appear are more than a mile apart and, curiously enough, similar tombs nearly always lie near together, it does not seem probable that they were the work of the same artist, neither do they agree in style.

A curious addition was made to the splay-topped Kheker at the close of the XVIIIth dynasty, namely, a round ball placed on the top of the ornament (Fig. 3). The earliest date at which this is met with in this Necropolis is that of the tombs of Surere Ramōse and Ramōse,[1] and of one tomb in which the name is erased, the first two being of the time of Amenophis III, and the third and fourth of that of Amenophis IV. As this addition to the Kheker is not found in any tomb of earlier date than those mentioned above, it might well be possible that foreign influence had something to do with its appearance. There seems no doubt that this ball at the top of the Kheker represented the sun, or rather the disc of the sun, and on that account it was invariably painted red or yellow, and was always undecorated. This was probably due to the Aten influence shortly before; the new addition to the Kheker came into general use in Ramesside times, when the Kheker ornament, used in conjunction with other friezes, was a common feature in tombs, especially in those of the period of Rameses II.

It would appear that it became the custom in the period of Amenophis III–IV to colour the roundel of the Kheker either red or yellow and no longer to decorate it with the usual circular bands and centre of blue, green and red. The sculptured roundels of the Khekers in Tomb 48 (Surere) are unfortunately not painted, but, as they are not incised with the chisel in concentric rings, it would appear that they were intended to be painted one colour only. The roundels of the Khekers in Tomb 192 (Kharuef) were, however, both sculptured and ornamented with coloured concentric rings. This disc form of the roundel was also usual in Ramesside tombs, with the exceptions that in Tomb 216 the roundel is painted blue, and in Tombs 19, 35, 112, 134, 135, 220, 148 and 259 the old colouring is retained. A marked deterioration from the graceful shape of the early Kheker is noticeable in Ramesside times in the Theban Necropolis, not only in the smaller tombs, but even in the more important ones. For instance, probably owing to the non-use of the usual five or six horizontal lines which helped the

[1] There are two tombs with the name of Ramōse. One of these (No. 46) cannot be strictly dated, but has been assigned by Dr. Gardiner in consideration of style, etc., to the period of Amenophis III. In this tomb the ordinary Kheker with a yellow roundel and the Kheker with yellow roundel and yellow disc are both employed, the former in the outer chamber or corridor of the tomb and the latter in the inner chamber. (Nos. 48, 46, 55 and 188.)

artist to proportion his ornament, the Kheker tends to become more and more slender in appearance, especially at the top, where it is drawn in by the tie. Sometimes, also, the very order of the colours which was insisted on in the XVIIIth dynasty was altered by inserting an extra band of colour, as in Tombs 19, 31, 45, 106, 134, 135, 255, etc., or by the reversal of the greens and blues, the latter error being found in only one tomb (No. 30, Khensmōse).

There are two interesting examples in the Necropolis of Khekers outside the periods of the XVIIIth, XIXth and XXth dynasties. The first is found in Tomb 60 (Antefoker), which belongs to the XIIth dynasty. In every respect the Kheker ornament in this tomb corresponds with those of the later periods, with the one exception that the blue outer band, now almost faded away, is outside the tie and not within it. The second example is in Tomb 36 (Aba), which is of the XXVIth dynasty, where the Kheker conforms to the usual shape but the arrangement of the colours is different. Instead of the ornament being coloured blue, green and red, reading from the outside, the order of the colours is in this case, blue, red and blue, the roundel being correspondingly treated. In other parts of the same tomb the Khekers are painted entirely yellow.

It has already been mentioned that the Kheker ornament ran along the extreme top of a wall, but there are exceptions to be found in Tombs 35, 161 and 254. In the first tomb, the ornament is placed below a floral frieze and separated from it by a broad band of blue. The second tomb, on the western end, also has a floral frieze with a Kheker frieze beneath it, and the last tomb has a broad band of Chequer pattern above the Kheker frieze, consisting of seven rows of small coloured squares alternating with white squares, each row being of one colour only, blue, green and red. On the two side walls of the western end of this tomb there is also a band of yellow above the Kheker frieze.

A similar use of yellow may be seen above parts of the frieze in the inner chamber of Tomb 147 (no name), where owing to the irregularity of the roof, a wide gap occurs in places between the top of the frieze and the ceiling. Rather than leave this bare, the decorator of the tomb coloured it with yellow.

In the tomb of Queen Nefertari a border painted to resemble sand is placed above the Khekers on some of the walls.

In four tombs (40, 64, 76 and 253) there is a thin band of ornamentation just below the ceiling line, known as "Tail-edging." This form of decoration is very rarely placed above a Kheker ornament, though it is common as vertical bands for the corners of tombs.

When the Kheker frieze is painted on the walls supporting a barrel-shaped or arched roof, it is sometimes put wholly or partially above the spring of the vaulting, which makes it appear to be part of the ceiling decoration and not that of the wall. In such barrel-vaulted chambers, it should be noted that the frieze follows a straight line across the two end walls at the same height as on the side walls, no attempt being made to make it follow the curve of the ceiling, except in the shrine of 93. A semi-circular space is, therefore, left above the frieze on the end walls which is generally filled in either with two figures of the deceased for whom the tomb was made, adoring a figure of Anubis couchant on a pedestal or with various figures of gods and emblematic signs.

In a few cases (38, 40, 43, 75, 90, 253, 254 and 258), the Kheker ornament is only found on some of the walls of a tomb, the corresponding portion of the walls being decorated with floral friezes. Both the pointed and splay-topped forms of Kheker are to be found together in three tombs (Nos. 42, 106 and 253),

the first case being especially interesting because the two kinds are actually to be seen on the same wall. In this connection, it should be noted that on one wall of Tomb 75 (Amenhotpe-si-se) a length of the Kheker frieze is found end to end with a strip of floral frieze.

Kheker friezes usually have a white or grey background, but there are exceptions, which may be seen in thirteen tombs (21, 26, 40, 46, 51, 55, 76, 89, 106, 130, 147, 253 and 259). In these tombs the colour of the background of the Kheker friezes is either red or yellow, in spite of the fact that the scenes below have the usual white or light-grey ground, except in the inner chambers or shrines of certain tombs, in which the background is yellow (21, 26, 40, 51, 55, 76, 89 and 253).

We even find in some tombs both coloured and white backgrounds for the Kheker ornament in the same chamber, though not on the same wall (76, 89 and 253).

The pointed form of the Kheker was the only form used in the Royal Tombs of Ramesside date, except in that of Sety I. It is also met with in nine of the tombs of the Nobles (39, 40, 42, 78, 85, 93, 106, 178 and 253), but, with the exception of four of these tombs (42, 78, 106 and 253), it occupies a very subordinate position. The pointed form first appears in this Necropolis as a frieze in tombs of about the time of Amenophis II (42, 85 and 93).

The colouring of these pointed Khekers varies considerably, and in no case does it resemble the colouring of the splay-topped, or ordinary type of Kheker, with the exception of Tomb 106 and the two Royal Tombs K. 22 and Q. 52. In five of the tombs of the Nobles (39, 40, 178 and 253) the pointed Khekers are only in two colours, either red (?) and blue, yellow (or red in 40) and blue, red and green or yellow and green, the arrangement being a broad mass of one of these colours in the middle of the Kheker, bordered on all the edges by a narrower band of a second colour. The roundels are treated in the same way, the centre of one colour being surrounded by a thin band of another colour. In two tombs (106 and 178) the roundels of this form of Kheker are painted wholly in yellow.

The pointed Khekers in Tomb 78 (Fig. 4) deserve special attention as nothing quite like them as regards the colouring is known elsewhere in the Necropolis. The middle portion of the upper part of the ornament is coloured in horizontal bands or rather blocks of blue, red and green separated by thin lines of yellow. The outer portions of the Kheker are painted yellow and the base is coloured in alternate bands of blue and yellow. The roundel, as will be noticed in the illustration, is a very elaborate one and consists of a blue centre surrounded by a ring of red with a ring of blue outside that again ; it is further decorated with white radii. The various bands of colours, with the exception of those belonging to the roundel, are edged with thin lines of dark red.

In the Royal Tombs the pointed Kheker is coloured in much the same way as those noted in the tombs of the Nobles, that is, in two colours, one of which was used as a border. These are, however, two variants which are not to be found used in a Kheker frieze in the tombs of the Nobles, the first being decorated with thin vertical stripes of blue, red, blue, green, blue and red, the last being in the centre. The roundel and base are similarly treated with these colours. Here we have an arrangement of colouring very similar to that of the ordinary splay-topped Kheker, except that there are eleven vertical bands of colours instead of the normal five.

The second variety is that shown in Fig. 5, a blue Kheker ornamented with fine lines (either dark blue or black) and edged with yellow. This can be seen in Tombs K. 11, Q. 43 and Q. 55, except that the colouring is in the first of these two tombs green and yellow, and in the second and third blue and red, green and blue predominating in the respective cases. In the tomb of Amenophis III, pointed Khekers are only present on the columns and are ornamented in exactly the same way as the ordinary Kheker, the roundel being painted red and edged with blue.

As a general rule, the colour of the roundels of the pointed Khekers agrees with that of the remaining portion of the ornament, but in seven of the Royal Tombs (Q. 42, 43, 51, 52, 55, Siptah, Rameses III) the roundels are coloured red, wholly so in three of these tombs (Q. 43, 51, K. 11), and edged with yellow in the remaining four, the body of the Khekers being painted either green or blue and edged with yellow or white. In the case of Tomb Q. 51, however, the Kheker is blue and edged with red.

It is curious that none of the roundels of the pointed Khekers in the Royal Tombs are wholly painted yellow, seeing that this colour was so popular for the purpose in the splay-topped Khekers. Yellow was also never used as the dominant colour in a pointed Kheker, but was solely employed as an edging.

In no case, either, was a ball or disc placed on the top of a pointed Kheker, as is so common with the splay-topped type.

In the Royal Tombs pointed Khekers are provided with either red or grey backgrounds, the former being the most popular colour. Yellow was never employed as a background for this form of Kheker, though it was so used with the splay-topped form.

In tombs in which the scenes are carved among the tombs of the Nobles, the Kheker ornament is usually either merely painted on the smooth rock face or the bare outlines, and sometimes the divisions of the colours, are incised. In some cases the frieze is carved in relief, as may be seen in Tombs 48, 57, 55, 106, etc. In many sculptured tombs, the Kheker frieze is merely painted on some walls and on other walls in the same tomb is both carved and then painted. The reason for this was probably the necessity of finishing a tomb as soon as possible, either because the owner found the cost of sculpturing the whole of the decoration of his tomb too much for his resources or because he died before his tomb was completed.

As most of the Royal Tombs are very heavily plastered, the Khekers are frequently found to be cut in this plaster as well as being merely painted. This is most common in the tombs of the Queens.

TOMBS IN WHICH KHEKERS ARE FOUND WITH A DISC AT THE APEX (AS FIG. 3).

TOMB.	COLOUR OF DISC.	COLOUR OF ROUNDEL.	DATE.
Seti I.	Yellow.	Yellow.	Seti I.
Haremhab.	Yellow.	Yellow.	Haremhab.
19.	Red.	Blue, green, blue and red.	Seti I.
23.	Yellow.	Red.	Meneptah.
26.	Yellow.	Yellow.	Rameses III.
30.	Red.	Red.	XIXth–XXth dynasty.
31.	Red.	Yellow.	Rameses II.

TOMB.	COLOUR OF DISC.	COLOUR OF ROUNDEL.	DATE.
35 (On cornice).	Red.	Blue, green and red.	Rameses II.
41.	?	Red.	Rameses to Seti.
46.	Yellow.	Yellow.	Amenophis III.
48.	Unpainted.	Unpainted.	Amenophis III.
49.	Blackened.	Blackened.	XIXth dynasty.
51.	Yellow.	Yellow.	Seti I.
55.	Yellow.	Yellow.	Amenophis III.
65.	Red.	Red.	Rameses X (?).
112.	Red.	Blue, green and red.	XIXth–XXth dynasty.
134.	Red.	Blue, green and red.	XIXth dynasty.
135.	Red.	Blue, green and red.	XIXth dynasty.
148 (Burnt).	Red (?).	Blue, green and red.	Rameses III–V.
157.	Blackened.	Blackened.	Rameses II.
158.	No colour.	No colour.	Meneptah.
159.	Yellow.	Red.	XIXth dynasty.
163.	Red.	Red.	XIXth dynasty.
178.	Red.	Yellow.	Rameses II.
188.	Uncertain.	Yellow.	Amenophis IV.
189 (Burnt).	Red (?).	Red (?).	Rameses II.
216.	Red (?).	Blue.	Rameses II.
220.	Red.	Blue, green and red.	XIXth–XXth dynasty.
255.	Red.	Yellow.	Haremhab.
259.	Yellow.	Blue, green and red.	Haremhab (?).

It will be seen from the foregoing list that out of a total of 25 tombs, after excluding the five, which are either blackened, uncoloured or doubtful, there are eight tombs with friezes of Khekers surmounted with a disc that still have their roundels painted in the old colours, namely, blue, green and red. In nine of the tombs the roundels agree in colour with that of their discs, and in five tombs the roundel is painted red if the disc is yellow or *vice versâ*. It may be gathered from this list, therefore, that the colouring of the new feature of the disc did not always influence the colour of the roundel.

In two of these tombs (Nos. 148 and 189) it is difficult to tell whether the colour employed for the discs was originally red or yellow, owing to the tombs having been badly burnt, thus causing a possible change of yellow to red.

At the close of the XVIIIth dynasty the Kheker ornament often appears in conjunction with other symbols. When it is used in this manner it is always the splay-topped form that is the one employed, there being but two examples (Q. 51 and new Ramesside tomb of Foucart, 1918) in Thebes where the pointed variety of Kheker is so used.

The commonest design in friezes where Khekers are used with other figures is a Hathor head alternating with figures of Anubis couchant on a pedestal, the figures and heads being separated from each other by two or more Khekers. Next in order of popularity is a row of figures of Anubis on a pedestal, the figures being divided by groups of Khekers.

Only one example has up to the present been found where Hathor heads appear alone with Khekers, and this occurs as a frieze on the southern wall of Tomb 45. The Kheker ornament is also used to form a frieze with the symbols

Dad and Thet in the inner chamber of Tomb 65. Sometimes a frieze, other than a floral one, was made up without employing the Kheker in any way, as can be seen in Tombs 14, 16, 45, etc. With the exception of one tomb (No. 71, Senmut), all such tombs are of Ramesside date, and for convenience sake the style of ornament and the order in which the ornaments appear are given in an appended list, which also deals with those friezes in which Khekers are combined with other figures.

KHEKER ORNAMENT IN CONJUNCTION WITH REPRESENTATIONS OF THE GOD ANUBIS COUCHANT ON A PEDESTAL.

Tomb 30. 1 Kheker, Anubis, 1 Kheker, vertical band of inscription, 1 Kheker, Anubis, etc.
,, 31. 2 Khekers, Anubis, 2 Khekers, Anubis, etc.
,, 35. (Inner chamber.) 3 Khekers, Anubis, 3 Khekers, Anubis, etc.
,, 189. Same as 35.
,, Q. 51. 3 pointed Khekers, Anubis, 3 pointed Khekers, Anubis, etc.

KHEKER ORNAMENT IN CONJUNCTION WITH HATHOR HEADS AND ANUBIS COUCHANT ON A PEDESTAL, WITH OR WITHOUT VERTICAL BANDS OF INSCRIPTIONS (FIGS. 8, 9).

Tomb 41. (Shrine.) 1 Kheker, Hathor head, 1 Kheker, Anubis, 1 Kheker, Hathor head, etc.
,, 51. 1 Kheker, Anubis, 1 Kheker, Anubis, 1 Kheker, Hathor head, 1 Kheker, Anubis, etc.
,, 135. 3 Khekers, Hathor head, Anubis, 3 Khekers, Hathor head, Anubis, 3 Khekers, etc.
,, 148. 3 Khekers, band of inscription, Anubis, band of inscription, Hathor head, band of inscription, 3 Khekers, etc.
,, 157. 3 Khekers, band of inscription, Anubis, 3 Khekers, band of inscription, Hathor head, band of inscription, 3 Khekers, etc.
,, 158. 3 Khekers, band of inscription, Hathor head, band of inscription, 3 Khekers, band of inscription, Anubis, band of inscription, etc.
,, 159. Same as No. 158.
,, 178. 3 Khekers, Hathor head, 3 Khekers, Anubis, 3 Khekers, Hathor head, etc.
,, 255. Anubis, 2 bands of inscription, Hathor head, 2 bands of inscription, 2 Khekers, 2 bands of inscription, Anubis, etc.

KHEKER ORNAMENT USED IN CONJUNCTION WITH *Dads* AND *Thets*.

Tomb 65. (Inner chamber.) 5 Khekers, 2 Dads, 2 Thets, 2 Dads, 5 Khekers, 2 Dads, etc.

KHEKER ORNAMENT USED IN CONJUNCTION WITH HATHOR HEADS (FIG. 10).

Tomb 45. (South wall.) 3 Khekers, Hathor head, 3 Khekers, Hathor head, etc.
,, 58. (Inner chamber.) 2 Khekers, band of inscription, Hathor head, band of inscription, 2 Khekers, etc.
,, 163. 2 Khekers, band of inscription, Hathor head, 2 Khekers, band of inscription, etc.

KHEKER ORNAMENT USED IN CONJUNCTION WITH FIGURES OF DECEASED ADORING ANUBIS.

Tomb 134. (Inner chamber.) Deceased, 2 bands of inscription, Anubis, 3 Khekers, band of inscription, deceased, etc.

FRIEZE MADE UP OF FIGURES OF THE DECEASED ADORING ANUBIS (FIG. 11).

Tomb 16. (North wall only.) 3 bands of inscription, deceased adoring Anubis, 3 Nefer signs, Utchat eye, incense jar, Shen sign. (These symbols occupy the whole length of the wall and are therefore not repeated.)
,, (? 7A). Anubis, band of inscription, deceased and his wife, band of inscription, Anubis, etc.
,, 45. (Eastern and western walls of southern end of tomb.) Band of inscription, figure of deceased, band of inscription, Anubis, band of inscription, figure of deceased, etc.

FRIEZE MADE UP OF SMALL FIGURES OF DECEASED AND HIS WIFE ADORING ANUBIS AND A HATHOR HEAD.

Tomb 221. Band of inscription, deceased and his wife before Anubis, band of inscription, deceased and his wife.

FRIEZE MADE UP OF *Dad* SIGNS ONLY.

Tomb 31. (Two walls in outer chamber.) 2 Dads, 2 bands of inscription, 2 Dads, etc.

FRIEZE OF ANUBIS COUCHANT ON A PEDESTAL ALTERNATE WITH HATHOR HEADS.

Tomb 58. (Inner chamber.) Hathor head, Anubis, Hathor head, Anubis, etc.
,, 166. (Jamb of entrance to shrine.) Same as Tomb 58.
,, 149. Hathor head, 2 bands of inscription, Anubis, 2 bands of inscription, Hathor head.

FRIEZE MADE UP OF ANUBIS COUCHANT ON A PEDESTAL WITH *Dad*, *Thet* AND OTHER SIGNS.

Tomb 14. Anubis, Thet, Dad, Thet, Anubis, Thet, Dad, etc.

FRIEZE OF HATHOR HEADS AND COLOURED CONES (FIG. 6).

Tomb 71. (Outer chamber.)

FRIEZE OF HATHOR HEADS WITH SUPPLEMENTARY *Nefer* SIGNS.

Tomb 6. (Second chamber.)

There are three tombs (Nos. 13, 166 and 184, outer chamber) in which the friezes are destroyed. The first one has only a vertical band of inscription and the front portion of an Anubis figure left of its frieze. The sole remains of the frieze in the second tomb is an Utchat eye on a Neb sign. In the third tomb it is just possible to see that Khekers in groups of three formed part of the frieze. The intervening signs or symbols between these Khekers are now entirely gone.

Numbers and names of tombs mentioned in this article :—

15. Shuroy.
19. Amenmōse.
21. User.
22. Wah.
31. Khons.
35. Bekenkhons.
38. Zeserkarasonb.
39. Puimre.
40. Amenhotpe or Huy.
42. Amenmōse.
43. Neferronpet.
45. Dhōut, usurped by Dhutemheb.
48. Surere.
55. Ramōse.
57. Khaemhet.
58. Unknown.
64. Hekerenheb.
65. Imisibe.
71. Senmut.
72. Rē.
75. Amunhetpesise.
76. Thenuna.
77. Erased.
78. Haremheb.
82. Amenemhēt.
84. Amunezeh.
87. Minnakht.
88. Pehsukher.
89. Amenmōse.
90. Nebamun.
91. Erased.
93. Kenamun.
106. Pesiūr.
112. Menkheperrasonb.
116. Erased.
134. Thauenany.
135. Behnamūn.
147. Erased.
161. Nakht.
166. Ramōse.
184. Nefermenu.
201. Rē.
251. Amenmōse.
254. Name lost.
255. Name lost.
K. 11. Rameses III.
K. 22. Amenhetep III.
Q. 1A. Setra.
Q. 42. Paraheremef.
Q. 43. Setymerkhepeshef.
Q. 51. Aset.
Q. 52. Thyti.
Q. 55. Amenkhepeshef.

E. MACKAY.

REVIEWS.

Die Annalen und die zeitliche Festlegung des Alten Reiches der Ägyptischen Geschichte.—LUDWIG BORCHARDT. 1917. 64 pp., 6 plates. (Berlin, Behrend.)

In this study of the Palermo stone, and other pieces of the similar Annals, there is certainly one solution of the problem ; but we must ask, is this the only solution ? The main idea is that the five rows of year-spaces, each of different spacing, can only rarely coincide in the divisions, and therefore the terminals of these different series can be found by continuing them up to a coinciding position. This will be seen described in ANCIENT EGYPT, 1916, pp. 116–118 ; Dr. Borchardt protests that he was already on that track before—no doubt—and the English method of 1916 had been already worked here in 1902. The verdict in 1916 was that " the irregularities prevent accurate conclusions " at any great distance. This has been ignored by Dr. Borchardt, who states the breadths of spaces to five places of figures, while his actual measures were only to three figures (11 spaces in 78·25 mm., 9 in 83·6, 11 in 83·0, 11 in 70·1, 8 in 63·5 ; and, judging by the lower four registers, the first length was 77·25 and was misread). Much more serious is the variation in the regularity of the spaces, which vary as 65 : 70, 53 : 58, 45 : 50, 57 : 62. Hence there are several solutions fairly possible for coincidences of the lines of the registers ; such as the numbers 24, 18, 22, 26, 21 ; or 81, 61, 75, 89, 71 ; or 146, 110, 135, 160, 128 (nearly Herr Borchardt's) ; or 162, 122, 150, 178, 142. There is yet more uncertainty due to all the measures being derived from photographs. Until there is an accurate direct measurement made of every line and thickness of each of the stones, it is wasted time to try for refinements. The best determination between the various possible number of spaces is the general character of the spaces on the back, belonging to the kings of the Vth dynasty. These agree to the length which is proposed, of 146, 112, 138, 163 and 131 spaces on the front ; so although there may be various solutions, there is a strong probability in favour of the one here set out.

A source of dating which is developed here is the high Nile being recorded in the latter part of the year, when divided between two reigns. As the times of high Nile are usually between 18 September and 7 October, and never more than three weeks beyond those limits, hence that part of the year must have coincided with a few months before the New Year. This gives the most effective result in the reign of Nefer·ar·ka·ra, Vth dynasty, thus dated between 3120 and 3460 B.C., or perhaps a century further either way. Objection has been made that this writing of the high Nile in the second half of divided years was due to convenience ; but that could only be true of one case in the four which occur, the other three could equally well be written in either space. This date on the

Egyptian system—one Sothic period earlier—would be 4580–4920 B.C., or the extreme limits of 4480–5020 B.C., the first of which would just agree with Manetho's history. The result of the spacing of the Annals deduced above is also shown to be closely in accord with Manetho, and Dr. Borchardt concludes that "Manetho had really good sources, and his copyists have not altogether spoiled him." Yet however much he rehabilitates Manetho from the Ist to the XIIth dynasty, he will have none of him from the XIIIth to the XVIIIth, but keeps to the arbitrary setting of eight contemporary lines of kings in that period, to bring it down to two centuries.

One evidence against shortening the time stated for the IVth dynasty is the prodigious amount of building quoted. Even if those kings built twice as quickly as Sahura, they would need 50 years each to get through the tasks of Sneferu, Khufu or Khafra. The mention of 955 years in the Turin Papyrus is inconclusively discussed. The uncertainty of reading (755, 955, 1755 or 1955) and the very fragmentary state of the document prevent any result being more than a guess.

An interesting matter is the recurrence of a *zet heb*. It appears in the 70th, 190th and 350th year-space. The 70 and 190 being 120 years apart give rise to taking this as the festival of a shift of Sirius by one month; and the 350th would be 400 from a hypothetical start at 120 before the 70th, and thus a festival of the shift of 100 days. But there is no sufficient explanation of the term *zet* here; and as Uazet may be thus written, it would be more regular to take these as festivals of Uazet; the last example being also side by side with Nekhebt, the parallel goddess, would bear this out.

A matter which casts a serious shadow on this work is the "doctoring" of two ivory tablets on p. 53. A second version of one tablet has the gratuitous insertion of  put in for the sake of argument, of which there is no trace on the original. A second version of another tablet has a break smoothed out, and a perfectly clear incised line obliterated along with it, in order to make out a similar hypothetical group. Neither of these proposed readings has the least ground, and to propose fictitious readings only throws a shadow on all the rest of the material.

We may say then that there is a fair case for the rendering of the Annals here put forward; but it is much less exact and certain than it is stated, and the omission of some passages would have left the remainder in a stronger position. The dating concluded from all the sources discussed is: Ist dynasty, 4186 B.C. [or 5646]; IInd, 3938 [5398]; IIIrd, 3642 [5102]; IVth, 3430 [4890]; Vth, 3160 [4620]; VIth, 2920 [4380]; XIIth, 1995 [3455].

Imperial University of Moscow, Egyptian Collection I.—B. A. TURAEFF. Sq. 8vo, 84 pp., 12 plates, 10 Figs. text. Petrograd, 1917.

A melancholy interest attaches to the last works of civilisation that emerged from the welter of Russia. As the 48 heliogravures are the part easiest for reference, we note the inscribed and important pieces in order. I 3, a half-length of a king of XIIth dynasty, attributed to Amenemhat III, like the Karnak statue, a bad style from which the other statues redeem this king; also four anonymous heads. II, a gracious seated figure of a Vth dynasty priest of the Sun temple, Uzot·oher. A pair of seated figures, the woman Pernerek, larger than the man Sneferu·men, a child between them, IVth dynasty. III, a very early cross-legged figure, holding a papyrus across the knees, no name. A seated figure of

Sen·nefer, XIIIth dynasty (?). Seated figure holding a tablet with adoration to Amen, and prostration to Horakhti, by Tetares, early XVIIIth. Seated figure of Ren·onkh·em·o. IV, two boys wrestling, XIIth. Small figure of Amenhetep III from a group. Squatting figures of Asek, XXVIth (?). V, four wooden figures, not fine or inscribed. VI, cross-legged figure, papyrus on knees, XIIth. Statuette of a woman in very tight ribbed dress. Statuette of a XIIth dynasty woman inscribed on front. Statuette of Sebek·hetep, son of Mut. VII, pair of figures of Naiăy and Ast, daughter of Nefu; fine work, mid XVIIIth; amulet worn by man. Another fine pair of late XVIIIth of ...akhu, naming his sons Userhet, Tu·uaă, Aăy, and At·uah ("the hour multiplies"). VIII, three wooden statuettes of Pu, Rennăy by her daughter Ra·aă·kheper·ka·senb, and Amenhetep by the same. These last two are good examples of the transition from the early XVIIIth style. IX, Basalt torso of Hor·să·ast under Nekhtnebef, with figure of Maot worn as an amulet. X, head, probably of Ethiopian queen, Upper half of statue of XXVIth. Squatting statue of XIXth. Head of Nekht-horheb, nose unfortunately battered, a front view is to be desired. XI, Ptolemaic headless figure of Imhetep, son of Săm and Heronkh. Naophorus kneeling. Peda·mahes, wife Thent·ua, son Horusa. Squatting figure, headless, of Horkhab XII, anonymous heads, and Roman statuette holding robe, of good work for that age. There is a full index of names; the text is entirely in Russian. The collection so far is what any dealer's shop might supply, without any selection for historic or artistic importance.

The Magic Papyrus Salt 825, *of the British Museum.*—B. A. TURAEFF. 8vo, 13 pp., 5 plates. Petrograd, 1917. A discussion and complete translation in Russian. We hope that Prof. Turaeff may survive the present disasters, and renew his contributions to this journal, which would be most welcome.

A Brief Chronology of the Muhammedan Monuments of Egypt to A.D. 1517. —CAPT. K. A. C. CRESWELL. 128 pp., 18 plates. (Bulletin de l'Institut Française d'Archéologie Orientale, T. xvi.)

For the work of the Arab period of Egypt this study will be an invaluable guide. The inscriptions and architecture are here viewed together, and the questions of the development of structural forms are placed on a firm foundation by the dated monuments. The buildings are noticed in historical order, with the dates A.H. and A.D. in the margin. The author states: "I have seen and examined every monument in this list (with four exceptions) in chronological order . . . in order to acquire a true historical perspective. . . . In this respect Cairo is unrivalled by any other city in Islam. What town, indeed, can show a series of monuments which, commencing in the IXth century, numbers over 220 before the year 1517 is passed?" More than half of these monuments are actually dated by an inscription. Every date of alterations and rebuilding are here collected and discussed; for instance, 11 dates for the Mosque of 'Amr, 8 dates for the Mosque of Ibn Tulun, 20 dates for El Azhar.

Though not in the usual scope of this journal, we may note points of general interest such as the use of pillars projecting as roundels on the face of walls is due to requiring bonding for a wall with a rubble core: the earliest armorial bearings on buildings are 1300 A.D., a time entirely under Central Asian domination, and the badges perhaps introduced from there; and the earliest monumental date in figure is 1321, but on coin weights figured dates are found three centuries

before. A matter of much interest, which the author does not touch on, is the close relation of style between Western Europe and Egypt ; the gateways of the XIth century at Cairo might belong to France or England in almost all points ; the pendentives of the XVth century show the love of short vertical lines of our perpendicular style ; the illuminated Qurans of the XIVth century in colour and flow of line might be French. Each century is more like its contemporaries in the West than like the next century.

Capt. Creswell has shown what a diligent student can do in leisure hours of two or three years ; what have hundreds of English officials done in ten times as long that they have been in Egypt ?

Levende og Dφde i det gamle Aegypten.—By VALDEMAR SCHMIDT. 4to. 265 pp., with 1519 figures. 90 kr., or 120 frs. 1919 (Frimodt, Copenhagen).

At last the veteran curator of Ny Carlsberg has put forth his great collection of material relating to burial in Egypt from the prehistoric to the Roman period, extracted from all publications on the subject. While of immense value to students, it will also be very useful to experts as enabling styles and details to be readily compared. The figures are very clear and legible, and each has a full description and reference to its source—which may encourage the study of Danish. Such a collective work is the more needed as the literature increases, 400 serials and publications being listed here as references. The scope includes the tomb-plans, coffins of all kinds, mummies, funeral figures and statues, and the scenes and mythology figured on the coffins. It will save many a weary search for comparisons, and will prove to be one of the most useful works of recent times.

Ancient Survivals in Modern Africa.—By G. A. WAINWRIGHT. 8vo. 46 pp., 10 plates. 1919 (*Bull. Soc. Sultanieh de Géographie, Caire*).

These papers amplify the comparisons which were made in this Journal, 1914, pp. 115, 159. The resemblances between ancient and modern forms figured here are (1) Throwsticks, as in Monbuttoo. (2) Bows with reflex curve, as in Eritrea. (3) Falchion, as in Monbuttoo. (4) Leaf-shaped dagger of Greece, as in the Sudan. (5) Narrow leaf-shaped bronze spear-head, as in Eritrea. (6) Wide iron spear-head, as among the Baggara. (7) Barbed arrows of ancient Nubia, as on Upper White Nile. (8) Drums with cross bracing used anciently by Nubians, now in Eritrea. (9) Harp with wide bowl, and head on the top, as among the Niam-niam. (10) Lyre with diverging sides and bent top bar, as in Eritrea. (11) Head-rest, as in Eritrea, with pillar and saddle forms. (12) Revolving fan, as in Nubia. (13) Wide palm-leaf carrying basket, still identical in Egypt. (14) The coiled oval store-basket with lid, as in Nubia. (15) Sandals of palm-leaf, as in Somaliland. (16) Game trap of converging spikes, as on White Nile. (17) Double bag-bellows, as on White Nile. (18) Semicircular feather fans on long handles, as in North Cameroons. (19) Black-polished pottery, as in Central Africa. (20) Cups and bowls with a small spreading stem, as in Unyoro. Finally there are notes on the composite bows, and bows reversed when strung. Such papers as these build up the study of the descent of civilisations.

Une Station Aurignacienne à Nag-Hamadi.—By E. VIGNARD. 4to. 20 pp., 18 plates. 1920 (*Bull. Inst., Français d'Arch. Or. Caire*).

The station reported is on the west side of Diospolis Parva. It is claimed that the chelleo-mousterian work is only found on the plateau, and the aurignacian site is on the low desert. The aurignacian is stated to be also the age of many pieces from about Ramleh and Khan Yunis in Palestine. But we are told "the solutrean, the magdalenian, the campignyan were unknown in Egypt." Yet the very forms here published in pl. xiv 3, 4, have been found abundantly, see *Naqada* lxxi, 31, 35, 40, 43 ; and these ovoid forms were never found in the graves, but only in a site with ashes on the desert. The solutrean seems well known already in the great quantity of surface flints west of the Fayum ; the magdalenian flake is the type found in the prehistoric graves. Though we cannot thus accept all that is stated, we welcome these drawings of 116 flints from this site. In some final remarks on the steatopygous type, it is stated that Dr. Capitan has found it still in Tunisia.

Bulletin of the Metropolitan Museum of Art, June, 1920. (New York.)

This number is valuable as giving photographs of important specimens in the Museum. A diorite group of Sahura with a nome figure of Koptos ; a diorite portrait sphinx of Senusert III ; a basalt figure of Harbas holding an Osiris, XXVIth ; a sculptor's model of a ram's head ; and on the cover a charming Fayum portrait of a boy, with three lines of writing upon the dress, unfortunately not transcribed or noticed.

The Museum.—MARGARET TALBOT JACKSON. 8vo. 280 pp., 7 pls. Longmans, 1917.

Though this is rather a book for trustees and curators, much—or most—of it will appeal to any archaeologist. The questions of the site, buildings, fittings, and exhibiting are discussed, besides the matters about staff and students, which are so much more fully developed in America than in Europe. It is instructive to read of the new museum in Berlin, "So many mistakes have probably never been made elsewhere" ; it is on an island so cannot be enlarged, and with heavy express trains past it. It is on a quicksand, requiring 200 feet depth of concrete to fill it, the digging out of which almost upset the next museum. Some usual fallacies are not cleared away by the authoress. Lighting should always be direct from sky, and not diffuse from ground glass or ceilings. Floors should be of tile, and never of slippery waxed wood. Picture galleries need dark screens placed so that the pictures can reflect them, and so avoid bright reflections. Labels should not spoil the effect by harsh contrast, a brown label with darker ink is quite clear enough. A dust-trap, with free ventilation is needful for cases, as all airtight fastenings are fallacious. Though these points are omitted, yet all curators and museum frequenters should read this book for the systematic view of management.

Thirtieth Annual Archaeological Report, 1918. 8vo. 131 pp. (Toronto.)

This is naturally occupied with Canadian history, and pre-historic remains. A long paper by Dr. Harris deals with the ideas about a lost Atlantic continent. The undoubted civilisation of Peru and other countries is only evidence of a remote occupation of America. The real difficulty lies in the disproportion in age of any civilisation or tradition with the hundred- or thousand-fold age of any geological connection of land. The traditions are quoted from Central America and the Antilles, from Plutarch, Plato, Proclus, Diodorus ; but all of these cannot cover more than 3,000 or 4,000 years at the most. The age when the migration of animals indicates a land connection is the late Eocene or early

Oligocene (Gadow, *Wanderings of Animals*), and that is a matter of at least three or four million years, probably more. It seems hopeless to look at the traditional ideas as evidence of more than local disturbances of the coasts, unless geologists can allow of a change of an entirely different order to anything now granted.

Report upon Archaeological Research, Kyoto Imperial University.—By K. HAMADA. 8vo. 72 pp. (Japanese), iii + 8 pp. (English), 30 plates. 1919 (Kyoto University). As archaeologists we must welcome this gratifying extension of research by Prof. Hamada; the prehistoric tombs were carefully excavated by him, the sculptures are reproduced in collotype with 5 plates in colour, and all the pottery is drawn accurately in section, giving a *corpus* of 173 types. The example given by European work has started our friends to equal it with their usual ability. Prof. Hamada has also published his travels in Italy and France, with a large number of photographs, as a popular volume, unfortunately for us entirely in his own language.

NOTES AND NEWS.

Mr. and Mrs. Brunton have already returned to Egypt to start on rock drilling in search of any chambers in the queen's pyramid and mastabas at Lahun. Mr. Miller and Mr. J. G. West will join the work, having obtained passages already. The rest of the party hope to obtain passages, namely Major Hynes, M. Henri Bach, Mr. Montgomerie-Neilson, and Prof. and Mrs. Petrie. It is hoped to continue the work southward from that of last season.

In Palestine the new School of Archaeology has begun work under Prof. Garstang at Ashkelon, where Minoan pottery has been found in the sea face of the mound of ruins. Unfortunately there is a great mass of mediaeval and Roman material to be removed before the more important strata are accessible.

The Egypt Exploration Society has left the great work at Abydos for the present, and Prof. Peet is to excavate at Tell el Amarna this winter.

Capt. Engelbach, R.E., has been appointed Chief Inspector for Upper Egypt, stationed at Luqsor.

Mr. Wainwright has been appointed Chief Inspector of Middle Egypt, stationed at Asyut.

It is to be regretted when societies criticise each others' affairs, as in a statement in a recent presidential address; this compels us to consider the facts. It has been remarked that the Egypt Exploration Society "is practically alone in the study of Egyptian archaeology, with the exception of the Egyptian Research Account, and the Egyptian wing of the Liverpool University, both of which perform useful functions." Looking at the last fifteen years, since the Egyptian Research Account became the British School of Archaeology in Egypt, it has published, 1018 plates, nearly all discoveries of antiquities, while the Society which it is said "is practically alone in the study of Egyptian archaeology," has published 654 plates, mostly copies of known monuments and not discoveries.

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HON. DIRECTOR, PROF. FLINDERS PETRIE, F.R.S.

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